

## Simulation Calculations of Solidification and Cooling of Copper Alloy Casts

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The article deals with the simulation calculation of solidification and cooling of plate-shaped castings cast into metal and into sand mould about cavity dimensions 80 x 80 x 10 mm. During the experiments were monitored conditions of filling, solidification and cooling in the die-cast (metal mould) and in the sand mould. Both about outer dimensions 120 x 120 x 80 mm. Die-cast was made of steel 1.2343 (ČSN 19552) and the sand mould was prepared of green sand (bentonite). For the purpose of the experiment was used foundry simulation software MAGMA 5. For simulation calculations were used physical and thermo-physical quantities in dependence on temperature. Concurrently were used knowledges of the simulation calculations performed at our department, Department of Engineering Technology, Faculty of Mechanical Engineering - Technical University of Liberec.

**Keywords:** Simulation calculation, Cooper alloy, Transmission coefficient, Contact resistance.

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